**Amendments to the Claims**:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Canceled)

2. (Currently Amended) A reforming catalyst degradation determining apparatus which determines whether a reforming catalyst that reforms a mixture of air and fuel is degraded, comprising:

a temperature sensor that detects a temperature of the reforming catalyst; ~~and~~

an electronic control unit ~~a determining portion~~ that determines ~~whether~~ that the reforming catalyst is degraded if a rate of increase in the detected temperature of the reforming catalyst after the mixture has started to be supplied to the reforming catalyst is slower than a predetermined rate; and

a map defining a correlative relationship between the temperature of the reforming catalyst and an air-fuel ratio of the mixture, the map being stored in a storage device of the electronic control unit.~~based on the temperature of the reforming catalyst detected by the temperature sensor, wherein the determining portion determines that the reforming catalyst is degraded if the temperature of the reforming catalyst detected by the temperature sensor is below a predetermined temperature.~~

3. (Canceled)

4. (Currently Amended) ~~A reforming catalyst degradation determining apparatus~~A fuel reforming apparatus which determines whether a reforming catalyst that reforms a mixture of air and fuel is degraded, comprising:

a temperature sensor that detects a temperature of the reforming catalyst; ~~and~~

an electronic control unit ~~a determining portion~~ that determines an extent of degradation of the reforming catalyst based on a rate at which the detected temperature of the

reforming catalyst rises or falls after an air-fuel ratio of the mixture supplied to the reforming catalyst has been changed; and

an air-fuel ratio controller that sets an air-fuel ratio of the mixture supplied to the reforming catalyst based on the temperature of the reforming catalyst detected by the temperature sensor.~~whether the reforming catalyst is degraded based on the temperature of the reforming catalyst detected by the temperature sensor,~~

~~wherein the determining portion determines whether the reforming catalyst is degraded based on a rate of change in the temperature of the reforming catalyst detected by the temperature sensor.~~

5. (Currently Amended) The reforming catalyst degradation determining apparatus according to ~~claim 4,~~claim 2, wherein the electronic control unit~~determining portion~~ determines that the reforming catalyst is degraded if the rate at which the temperature of the reforming catalyst detected by the temperature sensor rises, after the temperature of the reforming catalyst starts to rise, has not reached a predetermined rate.

6. (Currently Amended) The reforming catalyst degradation determining apparatus according to claim 5, wherein the electronic control unit~~determining portion~~ determines that the rate at which the temperature of the reforming catalyst rises has not reached the predetermined rate if the temperature of the reforming catalyst has not reached a predetermined temperature at a predetermined time after the temperature of the reforming catalyst starts to rise.

7. (Currently Amended) The reforming catalyst degradation determining apparatus according to claim 5, wherein the electronic control unit~~determining portion~~ determines that the rate at which the temperature of the reforming catalyst rises has not reached the predetermined rate, based on the time it takes for the temperature of the reforming

catalyst to rise to a predetermined temperature after the temperature of the reforming catalyst starts to rise.

8. (Currently Amended) The reforming catalyst degradation determining apparatus according to ~~claim 4,~~claim 2, wherein the electronic control unit~~determining portion~~ determines that the reforming catalyst is degraded if the rate at which the temperature of the reforming catalyst falls, after the temperature of the reforming catalyst starts to fall, is faster than a predetermined rate.

9. (Currently Amended) The reforming catalyst degradation determining apparatus according to claim 8, wherein the electronic control unit~~determining portion~~ determines that the rate at which the temperature of the reforming catalyst falls is faster than the predetermined rate, based on the time it takes the temperature of the reforming catalyst to fall, after the temperature of the reforming catalyst starts to fall, to a predetermined temperature.

10. (Canceled)

11. (Currently Amended) The reforming catalyst degradation determining apparatus according to ~~claim 10,~~claim 2, wherein the electronic control unit~~determining portion~~ determines whether the reforming catalyst is degraded based on the time it takes the temperature of the reforming catalyst to rise to a predetermined temperature after the temperature of the reforming catalyst starts to rise and the time it takes the temperature of the reforming catalyst to fall to a predetermined temperature after the temperature of the reforming catalyst starts to fall.

12.-17. (Canceled)

18. (Currently Amended) A fuel reforming apparatus comprising:

~~The reforming~~the reforming catalyst degradation determining apparatus according to claim 2, ~~further comprising:~~and

an air-fuel ratio controller that sets the~~an~~ air-fuel ratio of the mixture supplied to the reforming catalyst based on the temperature of the reforming catalyst detected by the temperature sensor.

19. (Canceled)

20. (Currently Amended) A reforming catalyst degradation determining method for determining whether a reforming catalyst that reforms a mixture of air and fuel is degraded, ~~comprising the steps of:~~comprising:

detecting a temperature of the reforming catalyst; ~~and~~

determining that the reforming catalyst is degraded if a rate of increase in the detected temperature of the reforming catalyst after the mixture has started to be supplied to the reforming catalyst is slower than a predetermined rate; and

determining an extent of degradation of the reforming catalyst based on a rate at which the detected temperature of the reforming catalyst rises or falls after an air-fuel ratio of the mixture supplied to the reforming catalyst has been changed.~~whether the reforming catalyst is degraded based on the detected temperature of the reforming catalyst, wherein the reforming catalyst is determined to be degraded if the detected temperature of the reforming catalyst is below a predetermined temperature.~~

21. (Canceled)

22. (Currently Amended) A reforming catalyst degradation determining method for determining whether a reforming catalyst that reforms a mixture of air and fuel is degraded, ~~comprising the steps of:~~comprising:

detecting a temperature of the reforming catalyst; and

determining an extent of degradation of the reforming catalyst based on a rate at which the detected temperature of the reforming catalyst rises or falls after an air-fuel ratio of the mixture supplied to the reforming catalyst has been changed.~~whether the reforming~~

~~catalyst is degraded based on the detected temperature of the reforming catalyst, wherein whether the reforming catalyst is degraded is determined based on a rate of change in the detected temperature of the reforming catalyst.~~

23. (Currently Amended) The reforming catalyst degradation determining method according to ~~claim 22,~~claim 20, wherein the reforming catalyst is determined to be degraded if the rate at which the detected temperature of the reforming catalyst rises, after the temperature of the reforming catalyst starts to rise, has not reached a predetermined rate.

24. (Currently Amended) The reforming catalyst degradation determining method according to ~~claim 23,~~claim 20, wherein the reforming catalyst is determined to be degraded if the temperature of the reforming catalyst has not reached a predetermined temperature at a predetermined time after the temperature of the reforming catalyst starts to rise.

25. (Currently Amended) The reforming catalyst degradation determining method according to ~~claim 23,~~claim 20, wherein the predetermined rate is determined based on the time it takes for the temperature of the reforming catalyst to rise to a predetermined temperature after the temperature of the reforming catalyst starts to rise.

26. (Currently Amended) The reforming catalyst degradation determining method according to ~~claim 22,~~claim 20, wherein the reforming catalyst is determined to be degraded if the rate at which the temperature of the reforming catalyst falls, after the temperature of the reforming catalyst starts to fall, is faster than a predetermined rate.

27. (Original) The reforming catalyst degradation determining method according to claim 26, wherein the predetermined rate is set based on the time it takes for the temperature of the reforming catalyst to fall to a predetermined temperature.

28-35. (Canceled)

36. (Currently Amended) The reforming catalyst degradation determining apparatus according to ~~claim 4,~~claim 2, wherein the electronic control unit ~~determining~~

~~portion~~ determines that the reforming catalyst is degraded if the rate at which the temperature of the reforming catalyst detected by the temperature sensor rises, after ~~an~~ the air-fuel mixture is supplied to the reforming catalyst, has not reached a predetermined rate.